



PUBLIC HEALTH  
**INFORMATICS**  
— INSTITUTE

# Immunization Information System (IIS) Data Quality Analyst

**Sample role description**

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This sample role description identifies typical duties and responsibilities of a data quality analyst and indicates sample competencies of a person fulfilling this role.

*Note: Actual position descriptions should include only the information applicable for the specific position or role. Depending on staffing levels, several roles may be combined within a single position, or several positions may fill the same role.*

## Summary

This role is responsible for achieving high quality data in the immunization information system (IIS) by developing and implementing preventive and corrective strategies to improve the quality of incoming data, outgoing data and data at rest. High quality IIS data are critical to establishing trust in the IIS and use of IIS data by the immunization program, providers, schools and other partners to increase immunization coverage rates. A key to the success of this role will be using resources developed by the Centers for Disease Control and Prevention (CDC), American Immunization Registry Association (AIRA) and Public Health Informatics Institute (PHII) to inform data quality improvement and alignment with CDC IIS Functional Standards.

## Alternate role titles

- Data quality coordinator
- Data assurance specialist
- Continuous quality improvement coordinator
- Data quality epidemiologist

## IIS core competencies

This role description is based on the PHII's [IIS Core Competency Model](#), which provides functional, behaviorally-based tasks or processes that can be observed or measured and are required at an organizational level for the successful, high-performing functioning of an IIS. Major duties and responsibilities below are organized into the applicable domains from the model.

## Primary Duties and Responsibilities (as applicable within jurisdiction)

Duties may include but *are not limited to*:



### Leadership and management

- Works with IIS manager to identify, prioritize and coordinate data quality activities to meet IIS and immunization program goals.
  - Provides leadership to the IIS data quality team and facilitates cross-team collaboration for implementing successful data quality initiatives and monitoring.
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## Law and policy

- Works with legal and internal information technology (IT) departments to facilitate IIS compliance with local and national laws, rules, policies and best practices for data access, data sharing and exchange.



## Communication

- Communicates frequently with providers, electronic health record (EHR) vendors and other partners to keep them informed of changes impacting IIS data quality, e.g., new vaccine codes, scheduled downtime for enhancements and maintenance, and changes in data exchange standards.
- Informs internal and external partners about local and national laws, regulations and policies that allow or restrict access to and use of IIS data.
- Presents at IIS national meetings to share lessons learned and serve as a subject matter expert to assist in developing best practices to improve IIS data quality.



## Data use

- Works with IIS vendor/IT department to build query capacity to generate vaccination coverage and line list reports based on user-defined parameters, e.g., patient age, ZIP code; uses reports to identify low coverage areas for program intervention to increase coverage rates.
- Works with IIS vendor/IT department to develop and support dashboards to inform the public about progress toward immunization goals.
- Contributes data and content to the jurisdiction's CDC Cooperative Agreement work plans and reports, CDC component applications and reports, and the CDC IIS Annual Report (IISAR); collaborates with CDC on pre- and post-submission quality control activities to verify IISAR responses.



## Data quality

- Works with IIS manager and interoperability analyst to develop and implement strategies informed by the CDC IIS Data Quality Blueprint and guidance from AIRA and PHII to assess, monitor and improve incoming data submitted by providers/other partners through all IIS reporting methods (e.g., HL7, IIS user interface, file transfer) and data at rest.
- Regularly reviews CDC Data Quality Reports, the CDC IIS Dashboard, and the jurisdiction's Cooperative Agreement (CoAg) work plans and reports, as well as reports from the AIRA Measurement and Improvement Aggregate Analysis Reporting Tool (AART), to identify and assist in prioritizing IIS enhancements and changes to internal reports and processes to align with CDC IIS Functional Standards and IIS community best practices.
- Documents standard operating procedures (SOPs) for staff to implement data quality assurance activities, e.g., manual merging of duplicate demographic records and vaccination events, unmerging of incorrectly merged records.
- Works with interoperability analyst to evaluate and quantifiably document the impacts of data quality activities on incoming data and data at rest; improves and prioritizes activities based on results.

- Collaborates with other staff, IIS vendor/IT department, other IIS, CDC, AIRA and other national partners (e.g., Veterans Health Administration) to implement interjurisdictional data exchange via the IZ Gateway; monitors incoming and outgoing data quality and works with partners to resolve issues.
- Works with the IIS vendor/IT department and CDC to implement privacy preserving record linkage (PPRL) tools to ensure consistent data quality across IIS and other systems.
- Solicits feedback on data quality from users of IIS data, e.g., immunization program, other health department programs, public health leadership, state government officials, CDC, providers, health plans, schools, individuals and families; acts on feedback to improve data quality.
- Uses recommended tools and services to improve accuracy of the jurisdiction's active population and geographical analyses, e.g., LexisNexis, to validate individuals' addresses and identify people who have moved or gone elsewhere; Smarty to format, validate and geocode IIS addresses to USPS standards.

### Interoperability

- Provides technical and programmatic support to onboarding staff, providers, EHR vendors and health information exchange (HIE) partners to test and monitor data submitted to the IIS via Health Level 7 (HL7) during initial onboarding and over time in the IIS testing and production environments; ensures collection of all CDC-endorsed data elements and conformance to national data exchange standards.
- Identifies, assesses and plans to incorporate data from available sources (e.g., newborn screening, lead screening, driver's license data) to improve demographic record completeness and accuracy.
- Monitors loading of vital records data into the IIS to ensure timely capture of all births, deaths and adoptions in the jurisdiction; works with Vital Records Office to resolve data quality issues.

### Information systems management

- Works with IIS vendor/IT department to facilitate high data quality by regularly assessing, updating and improving key IIS functions. These functions may include but are not limited to automated record matching and merging to minimize duplicate records; accurate vaccine forecasting based on CDC Clinical Decision Support for Immunization (CDSi) logic specifications; adhering to data quality standards defined in the CDC IIS Data Quality Blueprint; and standardized HL7 query/response for timely and accurate data sharing with providers and other partners.
- Participates in CDC, AIRA, PHII and IIS vendor consortium forums to collaborate on IIS upgrades and keep abreast of, and provide input into, changes to HL7, web services and other national standards for secure data exchange; works with IIS vendor/IT department to facilitate IIS compliance with standards.

### Training

- Trains staff in use of SOPs for data quality assurance activities.
- Works with training staff to ensure that provider training emphasizes the importance of submitting high quality data.

## Background and qualifications

### Successful candidates should have:

- Master's degree (preferably in public health or a relevant field) with a minimum of 1 year of professional experience in data management and analysis, preferably in a public health or health care setting

OR

- Bachelor's degree in computer science, informatics, public health, epidemiology or related field with a minimum of 2 years of professional experience in data management and analysis, preferably in a public health or health care setting

### Preferred knowledge, skills and abilities include:

- Knowledge of HL7 and other standards, best practices and general guidance for accurately and securely exchanging data between an IIS and other systems, including EHRs and other IIS
- Excellent data analysis and visualization skills
- Strong oral and written communication and interpersonal skills
- Proficiency in Microsoft Excel, Word, statistical software (e.g., SAS, R or SPSS), SQL query tool, and data visualization tools such as Tableau
- Ability to work independently and well in a high-pressure environment
- Ability to solve complex data quality issues requiring collaboration among multiple internal and external partners
- Ability to develop and maintain constructive and cooperative relationships among staff and partners